



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099

August 15, 2011

### MEMORANDUM

**SUBJECT:** Contract Laboratory Program Data Review

**FROM:** *my file*  
Marvelyn Humphrey, ESAT Regional Project Officer  
Environmental Services Branch (6MD-H)

**TO:** Vincent Malott, Superfund Project Manager (6SF-RA)

**Site :** WEST CR 112 GROUND WATER

**Case#:** 41486

**SDG#:** MF4N05

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2140.

# **ENVIRONMENTAL SERVICES ASSISTANCE TEAM**

ESAT Region 6  
10625 Fallstone Road  
Houston, TX 77099

**Alion Science and Technology**

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## **MEMORANDUM**

DATE: August 12, 2011

TO: Marvelyne Humphrey ESAT PO, Region 6 EPA

FROM: Sonya Meekins, Data Reviewer, ESAT

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT D63

SUBJECT: CLP Data Review

|                |               |
|----------------|---------------|
| Contract No.:  | EP-W-06-030   |
| TO No.:        | 024           |
| Task/Sub-Task: | 2-12          |
| ESAT Doc. No.: | A024-212-0063 |
| TDF No.:       | 6-10-528A     |
| ESAT File No.: | I-0413        |

Attached is the data review summary for Case # 41486

SDG # MF4N05  
Site West CR 112 Ground Water

### **COMMENTS:**

#### **I. LEVEL OF DATA REVIEW**

Standard Review was performed for this data package.

#### **II. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE**

CCS and the hardcopy review found the data package contractually compliant.

#### **III. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE**

The total number of sample results reviewed for this data package was 360. Some results were qualified for technical problems. The significant problems are addressed below.

- A. Matrix spike recoveries were below the QC limit for antimony, arsenic, beryllium, cadmium, chromium, and selenium.
- B. The arsenic, chromium, and selenium serial dilution differences were above the QC limit.

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REGION 6  
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10625 FALLSTONE ROAD  
HOUSTON, TEXAS 77099**

**INORGANIC REGIONAL DATA ASSESSMENT**

|            |             |                       |                          |
|------------|-------------|-----------------------|--------------------------|
| CASE NO.   | 41486       | SITE                  | West CR 112 Ground Water |
| LABORATORY | SENTIN      | NO. OF SAMPLES        | 18                       |
| CONTRACT#  | EP-W-09-040 | MATRIX                | Water                    |
| SDG#       | MF4N05      | REVIEWER (IF NOT ESB) | ESAT                     |
| SOW#       | ISM01.2     | REVIEWER'S NAME       | Sonya Meekins            |
| SF#        | 302DD2CA6R6 | COMPLETION DATE       | August 12, 2011          |

|            |        |        |        |        |        |
|------------|--------|--------|--------|--------|--------|
| SAMPLE NO. | MF4N05 | MF4N28 | MF4N41 | MF4N49 | MF4N57 |
|            | MF4N12 | MF4N35 | MF4N42 | MF4N50 | MF4N58 |
|            | MF4N13 | MF4N36 | MF4N45 | MF4N51 |        |
|            | MF4N27 | MF4N39 | MF4N46 | MF4N52 |        |

**DATA ASSESSMENT SUMMARY**

ICP

|                        |     |
|------------------------|-----|
| 1. HOLDING TIMES       | O   |
| 2. CALIBRATIONS        | O   |
| 3. BLANKS              | M   |
| 4. MATRIX SPIKES       | M   |
| 5. DUPLICATE ANALYSIS  | M   |
| 6. ICP QC              | M   |
| 7. LCS                 | O   |
| 8. SAMPLE VERIFICATION | O   |
| 9. OTHER QC            | N/A |
| 10. OVERALL ASSESSMENT | M   |

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

**ACTION ITEMS:**

**AREAS OF CONCERN:** Laboratory blank readings caused the qualification of eight results. Thirteen analytes had matrix spike recoveries below the QC limit. The zinc laboratory duplicate difference was above the QC limit. Six analytes had serial dilution differences above the QC limit.

**COMMENTS/CLARIFICATIONS**  
**REGION 6 CLP QA REVIEW**

**CASE 41486 SDG MF4N05 SITE West CR 112 Ground Water LAB SENTIN**

**COMMENTS:** This SDG consisted of 18 water samples for total metals (by ICP-MS) analysis, excluding calcium and sodium, following SOW ISM01.2. The laboratory requested and received a waiver from the Region to exclude calcium and sodium because of the negative impacts of high concentrations of these two analytes on the life of the ICP-MS's detector. The sampler designated sample MF4N42 for laboratory QC analyses.

The target analyte of concern was chromium with a desired detection limit of 2 ug/l. All samples met the user's desired detection limit criteria. Chromium was reported at concentrations over the user's desired detection limit for all samples except sample MF4N39.

A Standard Review was performed on this package as requested by the TDF. Sixty-five percent of the reported results were above the CRQLs. Some results were qualified for all samples because of problems with laboratory blank readings, matrix spike recoveries, a laboratory duplicate difference, and serial dilution differences. ESAT's final data qualifiers in the DST indicate the technical usability of all reported results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

**NOTE:** THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS. THE ASSESSMENTS ARE DEFINED BELOW.

Acceptable = No results were qualified for any problem associated with this QC parameter.

Provisional = Some results were qualified because of problems associated with this QC parameter.

Unusable = All results are unusable because of major problems associated with this QC parameter.

**1. Holding Times:** Acceptable. All samples met contractual and technical holding time criteria. Sample preservation was acceptable.

**2. Calibrations:** Acceptable. All calibration analyses met contractual requirements.

**3. Blanks:** Provisional. Preparation and calibration blanks met contractual requirements. In the reviewer's opinion, the analyte readings in the ICB and CCBs were attributed to instrument baseline drift and not laboratory contamination. Laboratory blank readings affected the results as indicated below.

The reviewer qualified the results above the CRQL as estimated and biased high for zinc in samples MF4N28, MF4N45, and MF4N50. However, the reviewer did not assign the

**INORGANIC QA REVIEW  
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**CASE 41486 SDG MF4N05 SITE West CR 112 Ground Water LAB SENTIN**

high bias flag to the zinc results because of a conflicting bias effect resulting from the matrix spike evaluation addressed in Section 4 below.

The reviewer qualified the zinc results above the CRQL for samples MF4N12, MF4N13, MF4N35, MF4N36, and MF4N51 as undetected ("U"), and the reported concentrations should be used as raised quantitation limits ("C").

All results at and below the CRQLs for the following analytes should be considered undetected and were flagged "U" at the CRQLs on the DST: antimony, beryllium, cadmium, chromium, cobalt, lead, selenium, silver, thallium, and zinc.

**4. Pre-digestion Matrix Spike Recovery:** Provisional. The pre-digestion matrix spike recoveries for the following analytes were below 75 percent and the results were qualified as estimated: antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, manganese, nickel, selenium, silver, vanadium, and zinc. The post-digestion spike recoveries for arsenic, beryllium, chromium, copper, and zinc indicated a bias effect. Therefore, with the exception of those raised to the CRQLs and "U" flagged for laboratory blank evaluation the results for the above analytes were also qualified as low biased. The reviewer did not assign the low bias flag to the zinc results for samples MF4N28, MF4N45, and MF4N50 because of a conflicting bias effect resulting from the blank evaluation discussed in Section 3 above.

**5. Duplicate Analysis:** Provisional. The reviewer qualified the zinc results as estimated because the laboratory duplicate difference for zinc exceeded the QC limit.

**6. ICP Quality Control:**

Serial Dilution: Provisional. The serial dilution differences for arsenic, chromium, cobalt, manganese, nickel, and selenium exceeded the QC limit, so the reviewer qualified all associated results as estimated.

Interference Check Sample (ICS): Acceptable. ICS results were contractually acceptable and indicated satisfactory interelement and background corrections.

Coefficients of Variation: Acceptable. Replicate instrument readings were consistent.

ICP-MS Tune: Acceptable. The tune analysis met QC criteria.

ICP-MS Internal Standard Relative Intensity: Acceptable. The internal standard %RIs associated with the reported sample results were acceptable.

**7. Laboratory Control Sample (LCS):** Acceptable. The LCS recoveries indicated satisfactory sample preparation and analysis.

INORGANIC QA REVIEW  
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CASE 41486 SDG MF4N05 SITE West CR 112 Ground Water LAB SENTIN

8. **Sample Verification:** Acceptable. The data package was complete. The DST included in this report is the final version.

9. **Other QC:** Not Applicable.

10. **Overall Assessment:** Some results were qualified for all samples because of problems with laboratory blank readings, matrix spike recoveries, a laboratory duplicate difference, and serial dilution differences.

## **INORGANIC ACRONYMS**

|                |   |
|----------------|---|
| <b>CADRE</b>   | Computer-Aided Data Review and Evaluation               |
| <b>CCB</b>     | Continuing Calibration Blank                            |
| <b>CCS</b>     | Contract Compliance Screening                           |
| <b>CCV</b>     | Continuing Calibration Verification                     |
| <b>CN</b>      | Cyanide   |
| <b>CRQL</b>    | Contract Required Quantitation Limit                    |
| <b>CSF</b>     | Complete SDG File                                       |
| <b>DST</b>     | Data Summary Table                                      |
| <b>HG</b>      | Mercury   |
| <b>ICB</b>     | Initial Calibration Blank                               |
| <b>ICP</b>     | Inductively Coupled Plasma                              |
| <b>ICP-AES</b> | Inductively Coupled Plasma-Atomic Emission Spectroscopy |
| <b>ICP-MS</b>  | Inductively Coupled Plasma-Mass Spectrometry            |
| <b>ICS</b>     | Interference Check Sample                               |
| <b>ICV</b>     | Initial Calibration Verification                        |
| <b>LCS</b>     | Laboratory Control Sample                               |
| <b>MDL</b>     | Method Detection Limit                                  |
| <b>NFG</b>     | National Functional Guidelines                          |
| <b>PE</b>      | Performance Evaluation                                  |
| <b>%D</b>      | Percent Difference                                      |
| <b>%R</b>      | Percent Recovery  |
| <b>%RI</b>     | Percent Relative Intensity                              |
| <b>%RSD</b>    | Percent Relative Standard Deviation                     |
| <b>QA</b>      | Quality Assurance                                       |
| <b>QC</b>      | Quality Control   |
| <b>QL</b>      | Quantitation Limit                                      |
| <b>RPD</b>     | Relative Percent Difference                             |
| <b>RSCC</b>    | Regional Sample Control Center                          |
| <b>SDG</b>     | Sample Delivery Group                                   |
| <b>SMO</b>     | Sample Management Office                                |
| <b>SOW</b>     | Statement of Work                                       |
| <b>SQL</b>     | Sample Quantitation Limit                               |
| <b>TAL</b>     | Target Analyte List                                     |

## HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number  
SDG: SDG Number  
EPASAMP: EPA Sample Number  
LABID: Laboratory File/Sample ID  
MATRIX: Sample Matrix  
QCCOD: Sample QC Code  
SMPQUAL: Sample Qualifier  
ANDATE: Sample Analysis Date  
ANTIME: Sample Analysis Time  
CASNUM: Compound CAS Number  
ANALYTE: Compound Name  
CONC: Compound Concentration  
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see Inorganic Data Qualifier Definitions on the next page)  
UNITS: Concentration Units  
ADJCRQL: Adjusted Contract Required Quantitation Limit Value  
SMPDATE: Sampling Date  
PRPDATE: Sample Preparation Date  
LRDATE: Laboratory Receipt Date  
LEVEL: Sample Level  
PERSOLD: Sample Percent Solids  
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water Samples)  
FINLVOL: Final Sample Volume  
METHOD: Method of Analysis  
STATLOC: Station Location

**Disclaimer:** ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

## **INORGANIC DATA QUALIFIER DEFINITIONS**

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U** Not detected at reported quantitation limit.
- L** Reported concentration is between the MDL and the CRQL.
- J** Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.
- R** Result is unusable.
- F** A possibility of a false negative exists.
- UC** Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.
- +** High biased. Actual concentration may be lower than the concentration reported.
- Low biased. Actual concentration may be higher than the concentration reported.
- W** The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

| CASE  | SDG    | EPASAMP | LABID    | MATRIX | QC CODE      | AN DATE    | ANTIME   | CASNUM  | ANALYTE   | CONC  | VALDQAL | UNITS | ADJCRQL    | SMPDATE    | PRPDATE    | LRDATE     | LEVEL | PERSOLD | SMPWTVL | FINVOL | METHOD    | STATLOC   |
|-------|--------|---------|----------|--------|--------------|------------|----------|---------|-----------|-------|---------|-------|------------|------------|------------|------------|-------|---------|---------|--------|-----------|-----------|
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7429905 | Aluminum  | 116   | ug/L    | 20.0  | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440360 | Antimony  | 2.0   | ug/L    | 2.0   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440382 | Arsenic   | 17.6  | J-      | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440393 | Barium    | 34.2  | ug/L    | 10.0  | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440417 | Beryllium | 1.0   | ug/L    | 1.0   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440439 | Cadmium   | 1.0   | ug/L    | 1.0   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440473 | Chromium  | 8.4   | J-      | ug/L  | 2.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440484 | Cobalt    | 1.0   | ug/L    | 1.0   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440508 | Copper    | 1.5   | LJ-     | ug/L  | 2.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7439896 | Iron      | 42.2  | LJ      | ug/L  | 200        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7439921 | Lead      | 1.0   | U       | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7439954 | Magnesium | 39300 | ug/L    | 500   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7439965 | Manganese | 1.4   | J       | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440020 | Nickel    | 5.7   | J       | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440097 | Potassium | 2160  | ug/L    | 500   | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-104   |           |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7782492 | Selenium  | 6.1   | J       | ug/L  | 5.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440224 | Silver    | 1.0   | UJ      | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440280 | Thallium  | 1.0   | U       | ug/L  | 1.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440329 | Zinc      | 71.7  | J       | ug/L  | 5.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N05  | 14739(S) | W      | Field_Sample | 06/27/2011 | 14:48:07 | 7440666 | Zinc      | 2.0   | UJ      | ug/L  | 2.0        | 06/20/2011 | 06/24/2011 | 06/21/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-104   |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7429905 | Aluminum  | 247   | ug/L    | 20.0  | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A     |           |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440360 | Antimony  | 2.0   | UJ      | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440382 | Arsenic   | 10.7  | J-      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440393 | Barium    | 79.9  | ug/L    | 10.0  | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A     |           |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440417 | Beryllium | 1.0   | UJ      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440439 | Cadmium   | 1.0   | UJ      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440473 | Chromium  | 20.2  | J-      | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440484 | Cobalt    | 3.4   | J       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440508 | Copper    | 2.9   | J-      | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7439896 | Iron      | 515   | ug/L    | 200   | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A     |           |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7439921 | Lead      | 1.0   | U       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7439954 | Magnesium | 47000 | ug/L    | 500   | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A     |           |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7439965 | Manganese | 360   | J       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440020 | Nickel    | 22.6  | J       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440097 | Potassium | 4760  | ug/L    | 500   | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A     |           |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440224 | Selenium  | 7.1   | J       | ug/L  | 5.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7782492 | Silver    | 1.0   | UJ      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440291 | Thallium  | 1.0   | U       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N12  | 14851(S) | W      | Field_Sample | 06/27/2011 | 15:04:29 | 7440666 | Zinc      | 35.3  | J       | ug/L  | 5.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A     |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7429905 | Aluminum  | 259   | ug/L    | 20.0  | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A DUP |           |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440360 | Antimony  | 2.0   | UJ      | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440382 | Arsenic   | 10.7  | J-      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440393 | Barium    | 77.4  | ug/L    | 10.0  | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   | 50      | 50      | MS     | LMW-A DUP |           |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440417 | Beryllium | 1.0   | UJ      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440439 | Cadmium   | 1.0   | UJ      | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440473 | Chromium  | 8.3   | J-      | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440484 | Cobalt    | 3.2   | J       | ug/L  | 1.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7440508 | Copper    | 2.5   | J       | ug/L  | 2.0        | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low   | 0.0     | 50      | 50     | MS        | LMW-A DUP |
| 41486 | MF4N05 | MF4N13  | 14852(S) | W      | Field_Sample | 06/27/2011 | 15:07:12 | 7439896 | Iron      | 437   | ug/L    | 200   | 06/21/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0   |         |         |        |           |           |









|       |        |        |          |   |              |                     |         |           |       |      |      |            |            |            |            |     |     |    |    |         |         |
|-------|--------|--------|----------|---|--------------|---------------------|---------|-----------|-------|------|------|------------|------------|------------|------------|-----|-----|----|----|---------|---------|
| 41486 | MF4N05 | MF4N57 | 14860(S) | W | Field_Sample | 06/27/2011 15:28:59 | 7440666 | Zinc      | 4.5   | J-   | ug/L | 2.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24A |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7429905 | Aluminum  | 1400  | ug/L | 20.0 | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440360 | Antimony  | 2.0   | UJ   | ug/L | 2.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440382 | Arsenic   | 11.7  | J-   | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440393 | Barium    | 170   | ug/L | 10.0 | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440417 | Beryllium | 1.1   | J-   | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440439 | Cadmium   | 1.0   | UJ   | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440473 | Chromium  | 73.6  | J-   | ug/L | 2.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440484 | Cobalt    | 9.8   | J    | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440508 | Copper    | 7.9   | J-   | ug/L | 2.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7439896 | Iron      | 1930  | ug/L | 200  | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7439921 | Lead      | 3.6   | ug/L | 1.0  | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7439954 | Magnesium | 37700 | ug/L | 500  | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7439965 | Manganese | 798   | J    | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440020 | Nickel    | 95.9  | J    | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440097 | Potassium | 9830  | ug/L | 500  | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low        | 0.0 | 50  | 50 | MS | WMW-24B |         |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7782492 | Selenium  | 5.0   | UJ   | ug/L | 5.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440224 | Silver    | 1.0   | UJ   | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440280 | Thallium  | 1.0   | U    | ug/L | 1.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440622 | Vanadium  | 10.4  | J    | ug/L | 5.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |
| 41486 | MF4N05 | MF4N58 | 14861(S) | W | Field_Sample | 06/27/2011 15:31:44 | 7440666 | Zinc      | 17.5  | J-   | ug/L | 2.0        | 06/20/2011 | 06/24/2011 | 06/22/2011 | Low | 0.0 | 50 | 50 | MS      | WMW-24B |

# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

|                               |                |            |  |                    |                         |           |            |  |
|-------------------------------|----------------|------------|--|--------------------|-------------------------|-----------|------------|--|
| Case No.                      | 41486          | SDG No.    | MF4N05   | SDG Nos. To Follow | Mod. Ref. No.           | Date Rec  |            |  |
| EPA Lab ID:                   | SENTIN         |            | <b>ORIGINALS</b>   |                    | <b>YES</b>              | <b>NO</b> | <b>N/A</b> |  |
| Lab location:                 | Huntsville, AL |            | <b>CUSTODY SEALS</b>   |                    |                         |           |            |  |
| Region:                       | 6              | Audit No.: | 41486/MF4N05   |                    | 1. Present on package?  | X         |            |  |
| Resubmitted CSF?              | Yes            | No         | X  |                    | 2. Intact upon receipt? | X         |            |  |
| Box No(s):                    | 1              |            | <b>FORM DC-2</b>   |                    |                         |           |            |  |
| COMMENTS:                     |                |            | 3. Numbering scheme accurate?  |                    | X                       |           |            |  |
|                               |                |            | 4. Are enclosed documents listed?  |                    | X                       |           |            |  |
|                               |                |            | 5. Are listed documents enclosed?  |                    | X                       |           |            |  |
|                               |                |            | <b>FORM DC-1</b>   |                    |                         |           |            |  |
|                               |                |            | 6. Present?  |                    | X                       |           |            |  |
|                               |                |            | 7. Complete?   |                    | X                       |           |            |  |
|                               |                |            | 8. Accurate?   |                    | X                       |           |            |  |
|                               |                |            | <b>TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)</b>                           |                    |                         |           |            |  |
|                               |                |            | 9. Signed?   |                    | X                       |           |            |  |
|                               |                |            | 10. Dated?   |                    | X                       |           |            |  |
|                               |                |            | <b>AIRBILLS/AIRBILL STICKER</b>  |                    |                         |           |            |  |
|                               |                |            | 11. Present?   |                    | X                       |           |            |  |
|                               |                |            | 12. Signed?  |                    | X                       |           |            |  |
|                               |                |            | 13. Dated?   |                    | X                       |           |            |  |
|                               |                |            | <b>SAMPLE TAGS</b>   |                    |                         |           |            |  |
|                               |                |            | 14. Does DC-1 list tags as being included?                                 |                    | X                       |           |            |  |
|                               |                |            | 15. Present?   |                    | X                       |           |            |  |
|                               |                |            | <b>OTHER DOCUMENTS</b>   |                    |                         |           |            |  |
|                               |                |            | 16. Complete?  |                    | X                       |           |            |  |
|                               |                |            | 17. Legible?   |                    | X                       |           |            |  |
|                               |                |            | 18. Original?  |                    | X                       |           |            |  |
|                               |                |            | 18a. If "NO", does the copy indicate where original documents are located? |                    |                         |           | X          |  |
| Over for additional comments. |                |            |  |                    |                         |           |            |  |

Audited Sonya Meekins

Sonya Meekins/ESAT Data Reviewer

Date 8/10/2011

Audited

Date \_\_\_\_\_

Signature

Printed Name/Title

DC-2



**USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: 41486

DAS No:

R

Region: 6  
 Project Code: EP-W-06-004  
 Account Code:  
 CERCLIS ID:  
 Spill ID:  
 Site Name/State: WEST COUNTY ROAD 112 GROUND WA  
 Project Leader: LUIS VEGA  
 Action: Combined RI/FS  
 Sampling Co: EA Engineering

Date Shipped: 6/20/2011  
 Carrier Name: FedEx  
 Airbill: 797220385658  
 Shipped to: Sentinel Inc.  
 4733 Commercial Drive  
 Huntsville AL 35816  
 (256) 534-9800

**Chain of Custody Record**

| Relinquished By       | (Date / Time) | Received By | (Date / Time) |
|-----------------------|---------------|-------------|---------------|
| 1 <i>Dwaine Beard</i> | 6/20/11 10:00 |             |               |
| 2                     |               |             |               |
| 3                     |               |             |               |
| 4                     |               |             |               |

| INORGANIC SAMPLE No. | MATRIX/ SAMPLER               | CONC/ TYPE | ANALYSIS/ TURNAROUND | TAG No./ PRESERVATIVE/ Bottles     | STATION LOCATION | SAMPLE COLLECT DATE/TIME | ORGANIC SAMPLE No. | QC Type         |
|----------------------|-------------------------------|------------|----------------------|------------------------------------|------------------|--------------------------|--------------------|-----------------|
| MF4N05               | Ground Water/<br>DWAIN BEARD  | L/G        | TM ISM01.2 (21)      | 6455820 (HNO3) (1)                 | LMW-104          | S: 6/20/2011 11:15       |                    | --              |
| MF4N35               | Ground Water/<br>DUANE THOMAS | L/G        | TM ISM01.2 (21)      | 6455850 (HNO3) (1)                 | WMW-08A          | S: 6/20/2011 13:55       |                    | --              |
| MF4N36               | Ground Water/<br>DUANE THOMAS | L/G        | TM ISM01.2 (21)      | 6455851 (HNO3) (1)                 | WMW-08B          | S: 6/20/2011 14:30       |                    | --              |
| MF4N42               | Ground Water/<br>DUANE THOMAS | L/G        | TM ISM01.2 (21)      | 6455858 (HNO3), 6455859 (HNO3) (2) | WMW-12B          | S: 6/20/2011 12:00       |                    | Lab QC          |
| MF4N50               | Ground Water/<br>DWAIN BEARD  | L/G        | TM ISM01.2 (21)      | 6455868 (HNO3) (1)                 | WMW-21A          | S: 6/20/2011 12:34       |                    | --              |
| MF4N51               | Ground Water/<br>DWAIN BEARD  | L/G        | TM ISM01.2 (21)      | 6455869 (HNO3) (1)                 | WMW-21A DUP      | S: 6/20/2011 12:34       |                    | Field Duplicate |
| MF4N52               | Ground Water/<br>DWAIN BEARD  | L/G        | TM ISM01.2 (21)      | 6455870 (HNO3) (1)                 | WMW-21B          | S: 6/20/2011 14:40       |                    | --              |

|   |   |  |                               |
|---|---|--|-------------------------------|
| Shipment for Case Complete? N                   | Sample(s) to be used for laboratory QC:<br><br>MF4N42 | Additional Sampler Signature(s):<br><br> | Chain of Custody Seal Number: |
| Analysis Key:<br>TM ISM01.2 = TM ISM01.2/ICP-MS | Concentration: L = Low, M = Low/Medium, H = High      | Type/Designate: Composite = C, Grab = G  | Shipment Iced? _____          |

TR Number: 6-042412979-062011-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Cbpy to: Sample Management Office, 15000 Conference Center Dr., Chantilly, VA 20151-3819 Phone 703/818-4200; Fax 703/818-4602

**REGION COPY**



**USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: 41486

DAS No:

R

|                  |                                |               |   |                                     |               |                    |               |
|------------------|--------------------------------|---------------|---|-------------------------------------|---------------|--------------------|---------------|
| Region:          | 6                              | Date Shipped: | 6/21/2011   | Chain of Custody Record             |               | Sampler Signature: | Dwaine Beard  |
| Project Code:    | EP-W-06-004                    | Carrier Name: | FedEx   | Relinquished By                     | (Date / Time) | Received By        | (Date / Time) |
| Account Code:    |                                | Airbill:      | 7948 7979 6942  | 1 <i>Dwaine Beard 6/21/11 10:00</i> |               |                    |               |
| CERCLIS ID:      |                                | Shipped to:   | Sentinel Inc.<br>4733 Commercial Drive<br>Huntsville AL 35816<br>(256) 534-9800 | 2                                   |               |                    |               |
| Spill ID:        |                                |               |   | 3                                   |               |                    |               |
| Site Name/State: | WEST COUNTY ROAD 112 GROUND WA |               |   | 4                                   |               |                    |               |
| Project Leader:  | LUIS VEGA                      |               |   |                                     |               |                    |               |
| Action:          | Combined RI/FS                 |               |   |                                     |               |                    |               |
| Sampling Co:     | EA Engineering                 |               |   |                                     |               |                    |               |

| NORGANIC SAMPLE No. | MATRIX/ SAMPLER                  | CONC/ TYPE | ANALYSIS/ TURNAROUND | TAG No./ PRESERVATIVE/ Bottles | STATION LOCATION | SAMPLE COLLECT DATE/TIME | ORGANIC SAMPLE No. | QC Type         |
|---------------------|----------------------------------|------------|----------------------|--------------------------------|------------------|--------------------------|--------------------|-----------------|
| MF4N12              | Ground Water/<br>DWAINE<br>BEARD | L/G        | TM ISM01.2 (21)      | 6455827 (HNO3) (1)             | LMW-A            | S: 6/21/2011 11:29       |                    | --              |
| MF4N13              | Ground Water/<br>DWAINE<br>BEARD | L/G        | TM ISM01.2 (21)      | 6455828 (HNO3) (1)             | LMW-A DUP        | S: 6/21/2011 11:29       |                    | Field Duplicate |
| MF4N27              | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455842 (HNO3) (1)             | WMW-03A          | S: 6/21/2011 13:20       |                    | --              |
| MF4N28              | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455843 (HNO3) (1)             | WMW-03B          | S: 6/21/2011 13:55       |                    | --              |
| MF4N39              | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455855 (HNO3) (1)             | WMW-11A          | S: 6/21/2011 14:45       |                    | --              |
| MF4N41              | Ground Water/<br>RESHMA<br>HOODA | L/G        | TM ISM01.2 (21)      | 6455833 (HNO3) (1)             | WMW-12A          | S: 6/21/2011 15:00       |                    | --              |
| MF4N61              | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455879 (HNO3) (1)             | WMW-26A          | S: 6/21/2011 10:30       |                    | --              |
| MF4N62              | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455880 (HNO3) (1)             | WMW-26B          | S: 6/21/2011 11:20       |                    | --              |

|                               |   |  |                               |
|-------------------------------|---|--|-------------------------------|
| Shipment for Case Complete? N | Sample(s) to be used for laboratory QC:   | Additional Sampler Signature(s): <i>Dwaine Beard</i> | Chain of Custody Seal Number: |
| Analysis Key:                 | Concentration: L = Low, M = Low/Medium, H = High<br>TM.ISM01.2 = TM.ISM01.2/ ICP-MS | Type/Designate: Composite = C, Grab = G              | Shipment Iced?                |

TR Number: 6-042412979-062111-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 15000 Conference Center Dr., Chantilly, VA 20151-3819 Phone 703/818-4200; Fax 703/818-4602

REGION COPY



**USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: 41486

DAS No:

R

Region: 6  
Project Code: EP-W-06-004  
Account Code:  
CERCLIS ID:  
Spill ID:  
Site Name/State: WEST COUNTY ROAD 112 GROUND WA  
Project Leader: LUIS VEGA  
Action: Combined RI/FS  
Sampling Co: EA Engineering

Date Shipped: 6/21/2011  
Carrier Name: FedEx  
Airbill: 7948 7979 3597  
Shipped to: Sentinel Inc.  
4733 Commercial Drive  
Huntsville, AL 35816  
(256) 534-9800

**Chain of Custody Record**

| Relinquished By       | (Date / Time) | Received By | (Date / Time) |
|-----------------------|---------------|-------------|---------------|
| 1 <i>Dwaine Beard</i> | 6/21/11 18:00 |             |               |
| 2                     |               |             |               |
| 3                     |               |             |               |
| 4                     |               |             |               |

| INORGANIC SAMPLE No. | MATRIX/ SAMPLER                  | CONC/ TYPE | ANALYSIS/ TURNAROUND | TAG No./ PRESERVATIVE/ Bottles     | STATION LOCATION | SAMPLE COLLECT DATE/TIME | ORGANIC SAMPLE No. | QC Type |
|----------------------|----------------------------------|------------|----------------------|------------------------------------|------------------|--------------------------|--------------------|---------|
| MF4N45               | Ground Water/<br>DWAINE<br>BEARD | L/G        | TM ISM01.2 (21)      | 6455863 (HNO3) (1)                 | WMW-19A          | S: 6/20/2011 16:05       |                    | --      |
| MF4N46               | Ground Water/<br>DWAINE<br>BEARD | L/G        | TM ISM01.2 (21)      | 6455864 (HNO3) (1)                 | WMW-19B          | S: 6/20/2011 17:02       |                    | --      |
| MF4N49               | Ground Water/<br>DWAINE<br>BEARD | L/G        | TM ISM01.2 (21)      | 6455867 (HNO3) (1)                 | WMW-20B          | S: 6/21/2011 9:49        |                    | --      |
| MF4N57               | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455875 (HNO3) (1)                 | WMW-24A          | S: 6/20/2011 15:40       |                    | --      |
| MF4N58               | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455876 (HNO3) (1)                 | WMW-24B          | S: 6/20/2011 16:35       |                    | --      |
| MF4N63               | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455881 (HNO3), 6455882 (HNO3) (2) | WMW-28A          | S: 6/21/2011 8:45        |                    | Lab QC  |
| MF4N64               | Ground Water/<br>DUANE<br>THOMAS | L/G        | TM ISM01.2 (21)      | 6455883 (HNO3) (1)                 | WMW-28B          | S: 6/21/2011 9:30        |                    | --      |

|   |   |  |                               |
|---|---|--|-------------------------------|
| Shipment for Case Complete? N                   | Sample(s) to be used for laboratory QC:<br><br>MF4N63 | Additional Sampler Signature(s):<br><br> | Chain of Custody Seal Number: |
| Analysis Key:<br>TM ISM01.2 = TM ISM01.2/ICP-MS | Concentration: L = Low, M = Low/Medium, H = High      | Type/Designate: Composite = C, Grab = G  | Shipment Iced?                |

TR Number: 6-042412979-062111-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 15000 Conference Center Dr., Chantilly, VA 20151-3819 Phone 703/818-4200; Fax 703/818-4602

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